

Program Evaluation Report

Sacramento Area Stormwater Program (NPDES Permit No. CA0082597)

Executive Summary

Tetra Tech, Inc., with assistance from U.S. EPA Region 9 and the California Regional Water Quality Control Board, Central Valley Region (Regional Board), conducted a program evaluation of the Sacramento Area Stormwater Program (Program) in March 2002. The purpose of the evaluation was to determine the copermitees' compliance with a National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Discharge Permit and to review the overall effectiveness of the program with respect to EPA's storm water regulations. The evaluation team reviewed the copermitees' compliance with the NPDES permit requirements and Stormwater Quality Improvement Plans (SQIPs) and conducted an in-field verification of program implementation. The program evaluation focused on all four copermitees—the County of Sacramento and the Cities of Folsom, Galt, and Sacramento.

This program evaluation report identifies program deficiencies and positive attributes only and is not a formal finding of violation. Program deficiencies are areas of concern for successful program implementation and, in some cases, may represent permit violations. Positive attributes are indications of overall progress in implementing the program.

The following program deficiencies are considered the most significant:

- The Program lacks an adequate inspection and enforcement program for industrial, commercial and other priority sources.
- Adequate maintenance of construction controls is lacking in the Cities of Sacramento, Folsom, and Galt.
- The County's Department of Transportation corporation yard lacks sufficient controls to prevent stormwater contamination.
- The City of Galt's stormwater ordinance provides legal authority but does not have adequate enforcement tools to achieve compliance.

Several elements of the copermitees' programs were particularly notable:

- The Program has conducted an evaluation to determine the number of samples required for the program to demonstrate long-term effectiveness.
- The Program has focused on identified water quality problems by developing detailed "Target Pollutant Reduction Strategies."

- The Program is evaluating the effectiveness of proprietary structural stormwater control measures for new development.
- The County has a comprehensive process to prevent discharges from private and public construction projects and ensures compliance with local ordinances and State General Construction Permit requirements.
- The City of Folsom's construction inspector works directly with City planners and private developers from pre-project meetings through project completion to ensure appropriate selection and use of E&S controls.

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1.0 Introduction

1.1 Program Evaluation Purpose

The purpose of the program evaluation was to determine the copermitees' compliance with the NPDES permit (CA0082597 and Board Order No. 96-105) and to evaluate the current implementation status of the Sacramento Comprehensive Stormwater Management Program (Program) with respect to EPA's stormwater regulations. Secondary goals included the following:

- Review the overall effectiveness of the Program.
- Identify and document positive elements of the Program that could benefit other Phase I and Phase II municipalities.
- Acquire data to assist in reissuance of the permit.

40 CFR 122.41(i) provides the authority to conduct the program evaluation.

This evaluation reviewed the practices and permit compliance status of all four copermitees: the County of Sacramento and the Cities of Folsom, Galt, and Sacramento.

The new tentative order currently drafted by the Regional Board will add the cities of Citrus Heights and Elk Grove to the permit program. Those two cities were not a part of this evaluation.

1.2 Permit History

The NPDES MS4 stormwater permit was issued on May 3, 1996, and has been administratively extended since its expiration on May 1, 2001. This current permit, the second issued to the copermitees, requires implementation of the Comprehensive Stormwater Management Program developed in 1994. The permit also required the development of an Effectiveness Evaluation Report, which was completed in 1995. At the time of the evaluation, the Regional Board had prepared a new draft tentative order that will ultimately replace the existing permit.

1.3 Logistics and Program Evaluation Preparation

Before initiating the on-site program evaluation, Tetra Tech, Inc., reviewed the following Program materials:

- NPDES Permit No. CA0082597
- Stormwater Quality Improvement Plan – Draft, City of Sacramento, October 2000
- Stormwater Quality Improvement Plan – Draft, County of Sacramento and Cities of Citrus Heights, Elk Grove, Folsom, and Galt, November 2000
- 2000/2001 Annual Monitoring Report (December 1, 2001)
- City of Sacramento Stormwater Management Program 2000/2001 Annual Progress Report (August 2000)
- 2000/2001 County of Sacramento Annual Progress Report (September 2001)
- Comprehensive Stormwater Management Program (1994)

- Effectiveness Evaluation Report (1995)
- Copermittees' web sites
- File correspondence with the copermittees and the permitting authority

On March 25–28, 2002, Tetra Tech, Inc., with assistance from the Regional Board, conducted the program evaluation. The evaluation schedule was as follows:

Monday, March 25	Tuesday, March 26	Wednesday, March 27	Thursday, March 28
<i>Sacramento County – Planning procedures.</i>	<i>All Parties – Program evaluation kickoff.</i>	<i>City of Sacramento – Municipal operations, public construction, illicit discharges, spill response, and restaurant inspection program.</i>	<i>City of Sacramento – Public education.</i>
<i>City of Folsom – Planning and private construction.</i>	<i>City of Sacramento – Planning and construction.</i>	<i>Sacramento County – Municipal operations, illicit discharges, spill response, and private construction workshop.</i>	<i>Sacramento County – Industrial inspection program.</i>
	<i>Sacramento County – Public and private construction.</i>	<i>City of Folsom – Illicit discharge program.</i>	<i>All Parties – Exit interview and presentation of preliminary findings.</i>
	<i>City of Folsom – Public construction and municipal operations.</i>	<i>City of Galt – Planning and construction, illicit discharges, spill response, and municipal operations.</i>	

Upon completion of the evaluation, an exit interview was held with the copermittees to discuss the preliminary findings. During the exit interview, the parties were informed that the findings were to be considered preliminary pending further review by EPA and the Regional Board. After completing the on-site evaluation, the evaluation team conducted a detailed review of the tentative order application document.

After the evaluation, the copermittees, principally the County and City of Sacramento, sent additional information such as examples of public education materials, monitoring program reports, and target pollutant prioritization documents. These additional documents, although not individually referenced here, were reviewed and are cited, where appropriate, in the findings below.

1.4 Program Areas Evaluated

The following program areas were evaluated:

- Program management
- Monitoring programs

- Public education programs
- Annual reporting
- Public agency program (municipal maintenance operations)
- New development management program
- Construction site management program
- Illicit discharge and spill response
- Industrial discharge management program

1.5 Program Areas Not Evaluated

The following areas were not evaluated in detail as part of the program evaluation:

- Monitoring program details (e.g., sample location, types, frequency, parameters, etc.).
- Other NPDES permits issued to the copermitees (e.g., industrial or construction NPDES stormwater permits).
- Legal authority. (The Regional Board had reviewed the legal authority when the permit was initially issued.)
- Inspection reports, plan review reports, and other relevant files. The program evaluation team did not conduct a detailed file review to verify that all elements of the Program were being implemented as described. Instead, observations by the evaluation team and statements from the copermitees' representatives were used to assess overall compliance with permit requirements. A detailed file review of specific program areas could be included in a subsequent evaluation.

1.6 Program Areas Recommended for Evaluation

The evaluation team recommends that the following additional areas of the Program be further evaluated:

- A detailed review of each copermitee's program(s) to address post-construction runoff (development standards) once the tentative order is issued.
- A more intensive review and field visit of BMPs for municipal maintenance activities.
- A follow-up on the progress of the industrial discharge management program and its integration with participating County and City agencies.

2.0 Program Evaluation Results

This program evaluation report identifies program deficiencies and positive attributes only, and is not a formal finding of violation. Program deficiencies are areas of concern for successful program implementation and, in some cases, may represent permit violations. Positive attributes are indications of a copermitee's overall progress in implementing the program. The evaluation

team identified only positive attributes that were innovative (beyond minimum requirements). Some areas were found to be simply adequate; that is, not particularly deficient or innovative.

The evaluation team did not evaluate all components of the copermittee's program. Therefore, the copermittees should not consider the enclosed list of program deficiencies as a comprehensive evaluation of individual program elements.

The most significant program deficiencies and positive attributes identified during the evaluation are noted in the Executive Summary and are identified with text boxes in the following subsections.

2.1 Sacramento Area MS4 Program—All Copermittees

2.1.1 Evaluation of Program Management

Positive Attribute:

- *The Stormwater Quality Improvement Plans (SQIPs) drafted for the new tentative order provide the copermittees with a solid vision for the overall program.*

Two SQIPs were drafted to comply with the new tentative order—one by the City of Sacramento (October 2000) and another by the County of Sacramento and the Cities of Citrus Heights, Elk Grove, Folsom, and Galt (November 2000). Both documents provide the copermittees with a solid vision and foundation for implementation of the program. For example, the County's November 2000 plan describes the overall program mission and vision, as well as the major goals and strategies for implementing the program. The document also includes, for each program element, a mission statement, potential pollutant sources, and activities to address those sources. Both plans also focus on specific pollutants of concern and/or target pollutant reduction strategies. This broad vision of the program, with a clear understanding of the water quality goals, gives the Program a solid foundation on which to build the programmatic details.

2.1.2 Evaluation of Monitoring Programs

Positive Attributes:

- *The Program has conducted an evaluation to determine the number of monitoring samples required for the program to demonstrate long-term effectiveness.*

In a November 1998 memorandum, "Discharge Monitoring Frequency Evaluations," the program's consultant evaluated the number of samples that must be collected during each monitoring year to produce statistically adequate data to measure long-term program effectiveness. The memo evaluated four different monitoring scenarios. Under the current scenario, conducting monitoring every year, a 30 percent reduction in pollutant concentrations would be detectable for most constituents with only three samples collected per year. If the pollutant concentration reduction were only 15 percent, however, more than five samples per year would be needed to detect that reduction. Additional sampling would be required to detect smaller reductions in pollutant loadings.

Many MS4 programs collect monitoring data without clearly defined goals and with the hope of demonstrating water quality improvements sometime in the future. The Program is commended for taking the initiative to proactively determine the number of monitoring samples required to detect reductions in certain pollutants.

- *The Program has focused on identified water quality problems by developing detailed “Target Pollutant Reduction Strategies.”*

The Program has identified specific pollutants of concern and has developed Target Pollutant Reduction Strategies to try to reduce the occurrence of these pollutants in receiving waters. In the draft SQIPs, target pollutant reduction strategies have been developed for diazinon, chlorpyrifos, coliforms/pathogens, copper, and lead.

To determine which pollutants to address, the Program has developed a step-by-step target pollutant prioritization procedure (March 2001). This procedure includes collecting data on sources of impairment, toxicity, and other parameters for specific pollutants to determine whether the pollutant should be included in the ranking matrix. For each pollutant included in the ranking matrix, a series of eight questions, with points assigned for each answer, is asked. The weighted scores are then ranked to determine potential target pollutants.

2.1.3 Evaluation of Public Education Program

Positive Attribute:

- *The Program has an extensive public education component with a wide variety of public education materials.*

The Program has developed a comprehensive public education program that encompasses classroom education, business/commercial education, media information, and other activities.

The *Clean Water Business Program*, launched in 1997, works with selected businesses to promote stormwater pollution prevention. This education- and incentive-based program is specifically working with carpet cleaners to ensure adoption of appropriate best management practices (BMPs). The Program encourages residents to use participating Clean Water Business Partner businesses by paying for one free carpet cleaning a month for a winner selected randomly from surveys returned by customers.

The Program also has extensive *classroom educational materials*. Stormwater protection education begins in grades 3 to 5. A 45-minute presentation introduces Sammy the Salmon, the stormwater mascot, and basic stormwater principles. The Splash program—science-based curriculum providing information on water quality topics to students in grades 5 to 12—comes next. Finally, adult education is addressed through Waterwise, a program targeted toward gardeners that promotes safer pest management practices.

The *Sammy Salmon mascot* also is used in a series of TV/radio ads broadcast locally and in a general outreach brochure and educational materials for children. This mascot is a recognizable and entertaining tool that helps broadcast the stormwater protection message.

Both the City and County of Sacramento have *web sites devoted to stormwater management* (www.sacstormwater.org and www.sactostormwater.org). Information on the outreach activities described above, and other programs, is provided on these sites.

2.1.4 Evaluation of Illegal Discharge Programs

Deficiency Noted:

- *The Program fails to conduct dry weather screening activities to identify potential illegal discharges.*

The copermitees do not have a regular, scheduled program to screen dry weather flows for illegal discharges. Although the City of Sacramento completed a field screening in 1996, there is no regular schedule or documented procedures for updating this survey or conducting similar field screening activities. The other copermitees' illegal discharge programs also do not include proactive programs to screen dry weather flows. Failure to include these activities can result in programs that are more reactive than proactive. Future field screening activities could be integrated into existing municipal operations (e.g., maintenance programs) and/or other illicit discharge programs.

2.1.5 Evaluation of Construction Programs

Positive Attribute:

- *The Program, with the County serving as the lead agency, routinely provides construction site management training sessions to local contractors and the development community.*

Four to six such training sessions are held each year. The 2001 sessions attracted more than 700 participants. The training sessions outline the requirements of the County's Stormwater Ordinance and the State's General Construction Permit. Presentations on proper construction site management and E&S controls are provided. The training sessions usually offer an opportunity for E&S control vendors to display their products, followed by an in-field demonstration and training session. Regional Board participation at these events demonstrates the State and local commitment to enforcing the applicable requirements.

2.1.6 Evaluation of New Development Program

Positive Attributes:

- *The Program is evaluating the effectiveness of proprietary structural stormwater control measures for new development.*

The Program has developed a comprehensive protocol to measure the performance of proprietary stormwater control products before they may be placed on the Program's "acceptable" list. The Program also has completed the report *Investigation of Structural Control Measures for New Development* (November 1999), in which only one proprietary device was conditionally acceptable. This report and the protocol give the copermittees valuable information on the performance of these devices and ensure that less-than-effective devices are not put into service.

- *The City of Sacramento and the County are requiring the installation of post-construction controls through the On-Site Manual.*

The City and County of Sacramento produced *Guidance Manual for On-Site Stormwater Quality Control Measures* (January 2000). The manual requires source and/or treatment control measures for identified land uses. If a regional control/treatment measure is present (e.g., a regional detention basin), only source control measures are required. Where regional measures are not used, treatment control measures are required for all types of projects greater than 1 acre, except for single-family residential projects, where they are required only if the project is larger than 100 acres. Treatment controls can include vegetative swales, filter strips, media filters, infiltration trenches, porous paving blocks, and approved proprietary devices.

Deficiency Noted:

- *The Program should encourage developers to consider alternatives to stormwater ponds such as low-impact development practices and reduction in impervious surfaces.*

The copermittees appear to rely extensively on regional stormwater detention ponds when alternative development practices could help reduce the need for such ponds. For example, the North Natomas project, by far the largest residential development in the City of Sacramento, is designed with 10 regional detention basins ranging up to 80 acre-feet in volume or 40 acres in size. The use of alternative design techniques, such as low-impact development practices and policies that reduce the amount of impervious surface, could reduce the need for and size of these basins. Also, because stormwater contained in most of the City's basins needs to be pumped to reach the Sacramento River, a reduction in stormwater storage volumes could reduce not only design and land acquisition costs but also pumping and maintenance costs. The Program should explore opportunities, such as training or demonstration projects, to encourage the use of these alternative practices.

2.1.7 Evaluation of Industrial Program

Deficiency Noted:

- *The Program lacks an adequate inspection and enforcement program for industrial, commercial, and other priority sources.*

To date, the industrial program has largely targeted a select number of specific business categories (e.g., restaurants, metal finishers, carpet cleaners) by focusing on outreach and voluntary compliance. Although the County enacted its Stormwater

Management and Discharge Control Ordinance in 1998, formal enforcement activities have yet to occur and compliance has been achieved through re-inspection and verbal warnings. Although considerable coordination and program development work had occurred previously, at the time of the evaluation the Industrial Program was in an evolutionary state awaiting issuance of the new tentative order. The evaluation identified four significant areas of concern the Program will likely need to address as the industrial program evolves to meet anticipated tentative order requirements.

(1) Program Coordination. Other than some potential and currently unspecified involvement in specific enforcement activities within their jurisdictions, the degree of participation by the three cities in the County-led industrial inspection program was unclear. Given the number and diversity of agencies involved, coordinating program activities such as generating and assigning lists of applicable businesses, tracking inspections, and reporting progress will be a significant task. The Water Resources Department will need to provide adequate resources and establish a detailed procedure for tracking the types and frequency of inspections.

(2) Training, Inspection Protocol, and Consistency. The joint inspection conducted during the evaluation indicated that the Hazardous Materials Division (HMD) inspector had not been sufficiently trained to identify unauthorized non-stormwater discharges as potential violations of the State General Industrial Activity Permit and/or local ordinance or identify appropriate remedial measures (cease and desist). Water Resources is tasked to provide training to County inspectors regarding the local stormwater ordinance and State General Industrial Activity Permit requirements. Once trained, these inspectors should be expected to readily identify potential violations, including unauthorized non-stormwater discharges, and require remedial measures where appropriate.

(3) Enforcement Responsibilities and Response. Based on the experiences of other MS4 stormwater programs in California and the Sacramento Area Program's construction element, the Program should anticipate a high level of noncompliance in the industrial community. Water Resources and the participating agencies need to devise a coordinated and systematic approach regarding prioritization, follow-up inspections, and enforcement. To maximize the efficiency and effectiveness of the inspection program, the participating agencies should have the legal authority and responsibility for initiating enforcement and should request the services of Water Resources only when enforcement escalates beyond a specific threshold. Once fully initiated, the industrial program should work similar to the County's construction program and should maximize the combined capabilities of the respective County agencies and the Regional Board. The Regional Board's participation in priority setting and enforcement should be maximized. The City of Sacramento's *Guidelines for Determining Administrative Penalties for Prohibited Non-Stormwater Discharges* and/or the IWS' *Enforcement Response Plan* could be used as a template for formal escalation procedures.

(4) City Participation and Jurisdictional Issues. The evaluation was unable to clearly identify how or when local ordinances and jurisdictional issues will be coordinated within the overall industrial program. The Program should establish a clear protocol regarding City participation.

2.2 City of Sacramento

2.2.1 Evaluation of Program Management

Positive Attributes:

- *The City's draft Stormwater Quality Improvement Plan includes minimum performance standards for each activity/BMP, which in many cases provide measurable targets for the program to achieve.*

Examples of minimum performance standards cited in the plan include:

- **BMP:** Stenciling Program - **Performance Standard:** Stencil 300 inlets/year
- **BMP:** Clean Water Business Partners – **Performance Standard:** Add one new business sector/year
- **BMP:** Construction Inspections – **Performance Standard:** All projects
- **BMP:** Classroom Presentations – **Performance Standard:** Visit 20 classrooms

Although in some cases additional detail or measurable elements could be added to these performance standards, the City is commended for documenting the level of effort expected in its program.

- *The City conducts a stormwater awareness tracking survey every 2 years to determine changes in City residents' awareness of stormwater pollution.*
The last survey was conducted in June 2001 and consisted of approximately 400 residents for a sampling error of less than ± 5 percent. The survey questionnaire consisted of 52 distinct questions that averaged 9 minutes to administer. The questions were largely the same as previous survey questions to allow the City to determine trends in the data. For example, when the City asked residents in 2001 where their stormwater runoff goes, all but 20 percent answered "A river, creek or ocean." This is an improvement over the 27 percent of residents in 1999 who answered this question incorrectly or said they did not know. (City of Sacramento, Stormwater Awareness Program Tracking Survey, Final Executive Summary, August 2001).
- *The City annually appropriates \$10,000 to fund community action grants, which focus on local projects that will improve water quality.*
These grants help establish working partnerships with local organizations and help the City achieve its stormwater educational goals. Past grants have been awarded to establish educational programs at the zoo, restore local streams, and conduct stormwater classes at youth day camps.

2.2.2 Evaluation of Illegal Discharge Program

Positive Attribute:

- *The City has developed targeted programs to address illicit discharges, spill response, and recycling/hazardous waste collection.*
 - *The City conducted a detailed field screening for illicit connections in 1994 and 1996. Although this screening did not video inspect individual storm drain lines, the City did take water quality samples of dry weather flows. Most of the dry weather flows were found to be due to landscape irrigation, and the primary pollutant in almost all basins analyzed was fecal coliform bacteria. See finding 2.1.4 for information on the need for additional field screening.*
 - *The City has developed Guidelines for Determining Administrative Penalties for Prohibited Non-Stormwater Discharges. These guidelines, written in July 2001, define four levels of violations and set specific administrative penalty ranges for each level (up to \$25,000 per violation for Level A violations and a minimum of \$100 for Level D violations). The guidelines also describe typical actions for first, second, and subsequent violations based on whether the discharge is hazardous or residential/business.*
 - *The City has established rewards to encourage reporting of illegal dumping. A \$500 award is offered if a criminal citation is issued and a conviction follows. Residents are eligible to receive a \$100 reward if they provide the City with valid information (e.g., personal identification, license plate number/vehicle identification) on illegal dumping.*
 - *The City collects household hazardous waste 5 days a week at a central collection facility. The City also has established a curbside collection system for used motor oil and oil filters.*

2.2.3 Evaluation of Construction Program

Positive Attributes:

- *Construction inspectors use a partial stop work order and other innovative actions to enforce E&S control ordinances.*
In addition to complete stop work orders, the City inspectors also use partial stop work orders, which shut down construction in the specific area with inadequate erosion control or other water quality problems. For example, an inspector may shut down any work outside a building but allow contractors inside the structure to continue working. The City inspectors identify these partial stop work areas with yellow caution tape, clearly marking off the area of concern for the contractor.
- *A contractor trailer in the North Natomas project area is specifically devoted to construction stormwater pollution prevention plans (SWPPPs).*

This dedicated construction SWPPP trailer includes copies of all the SWPPPs for the project area, erosion control plans, and laminated site maps on the walls. The contractor's erosion control leader and the City's erosion control inspector mark on the laminated maps areas where erosion control needs to be improved. At the time of the evaluation, the site maps were up to date and the trailer was actively being used. This trailer represents an excellent forum for effective coordination between the contractor and the City.

Deficiency Noted:

- *The City of Sacramento fails to ensure maintenance of private construction E&S controls.*

Although the City E&S control inspector has been effective in conducting inspections and ensuring compliance, this one inspector has not been able to effectively monitor the large number of active construction projects, particularly in the North Natomas development. The City needs to increase the frequency of inspections at all active construction projects to ensure compliance with its local ordinance.

2.2.4 Evaluation of New Development Program

Adequate.

See findings in section 2.1.6 for information on the City's role in new development as it applies to the Program as a whole.

2.2.5 Evaluation of Municipal Operations Program

Deficiencies Noted:

- *The City needs to develop written standards for municipal maintenance activities.*
Although the City municipal maintenance field crews were experienced and well trained, they did not have written standards for how routine maintenance activities should be performed to prevent water quality degradation. Such standards would be useful for new employees as well as existing staff. As an example, the City should review the BMP handbooks developed by the County Department of Transportation and described below in section 2.3.5.
- *Green waste deposited in the street is a potential illicit discharge and maintenance concern.*
City residents are allowed to deposit noncontainerized green waste (lawn and garden clippings) onto the street for weekly collection by the Department of Public Works. Although residents are instructed to put the green waste out only right before collection and to avoid putting it in gutters or near storm drains, this material represents a potential illicit discharge to the MS4 and a significant maintenance concern for Public Works staff. The City is encouraged to find additional ways to educate residents on the potential problems this practice can cause or to find alternatives to the current practice.

2.2.6 Evaluation of Industrial Program

This program component, still under development during the evaluation, will be addressed primarily through a cooperative agreement with the County. See the finding in section 2.1.7 above.

2.3 County of Sacramento

2.3.1 Evaluation of Program Management

Positive Attribute:

- *The County has installed a comprehensive program involving a multitude of individual departments and has developed a SQIP containing detailed Performance and Effectiveness Measures.*

The County's stormwater management program integrates the activities of dozens of individual departments, divisions, and sections for stormwater protection. The County has also reached out to the communities of Folsom, Galt, Citrus Heights, and Elk Grove and has attempted to cooperate with or offer stormwater services to these communities, where appropriate.

The County has also developed a comprehensive SQIP that includes Performance and/or Effectiveness Measures for each program element subtask. These measures provide discrete and discernible measurable goals that aid in evaluating the effectiveness of the program itself. For example, the County tracks the number of warnings, corrective actions, penalties, and stop work orders issued as a performance measure and uses the number of illegal non-stormwater discharges reported as an effectiveness measure.

Although in some cases additional detail or numeric elements could be added to these measures, the County is commended for establishing measurable goals for each program element.

Deficiency Noted:

- *The County lacks a standardized employee training program.*
The County does not have a unified and formal stormwater training program for its employees. Employee training is generally department-specific and is largely based on verbal instruction provided by department management, supervisors, and in some cases the Water Resources stormwater team. As an example, the Street Transportation and Water Quality Departments have separate training programs for their employees. Full implementation of the industrial discharge management program will result in the need to train inspectors from several different County agencies rather than develop numerous training programs. The evaluation team recommends the creation of a general stormwater awareness program for new employees ("Stormwater 101") and potentially more targeted training for maintenance crews, industrial and commercial business inspectors, and private and public construction inspectors. Such

programs would provide the County with a consistent and easily reproducible training program.

2.3.2 Evaluation of Illegal Discharge Program

Positive Attribute:

- *The County's spill response, illicit discharge investigation, and hazardous materials programs are thorough and well coordinated.*

The County's Environmental Health Department, Department of Water Quality, and the Department of Transportation work together collaboratively to address spills, illicit discharge investigations, and hazardous material collection and response activities. The Environmental Health Department has staff dedicated to environmental crimes and incident response, and the Department of Water Quality provides four "call truck" staff tasked with spill response and illicit discharge investigation. These persons work closely with supervisors and crews from the Department of Transportation's Hazardous Materials Response Team to identify and remove hazardous and nonhazardous materials that might otherwise have entered receiving waters. The Department of Transportation keeps detailed records regarding the number of events and quantities of materials removed through street sweeping, roadside cleanups, and spill responses. A significant number of employees are trained as responders, and the County has supplied an impressive inventory of equipment and vehicles. These activities augment the County's other household hazardous waste collection activities.

See the finding in section 2.1.4 regarding the need for proactive screening of dry weather flows.

Deficiency Noted:

- *The Department of Water Quality's "call truck" staff lack enforcement capabilities.* The County should expand the enforcement responsibilities of the Department of Water Quality's "call truck" staff so that they enforce on the spot the requirements of the local ordinance for identified illicit discharges. Currently, these persons need to contact the Department of Transportation supervisor or the Water Resources Department to issue citations and notices of violation. This responsibility should be granted to the in-field first responders.

2.3.3 Evaluation of Construction Program

Positive Attributes:

- *The County has a comprehensive process to prevent discharges from private and public construction projects and ensures compliance with local ordinances and State General Construction Permit requirements.*

This comprehensive process includes appropriate legal authority, frequent inspection by multijurisdictional departments, a large number of qualified and trained E&S control inspectors, extensive communication with and outreach to the development

community, and a cooperative and beneficial relationship with the Regional Board. The County's construction oversight program could be a model for other Phase I and II communities.

As the lead agency, the Water Resources Department provides leadership for the activities of the Construction Management Division (CMD) and Building Inspection Division (BID) E&S control inspection teams. The interdepartmental communication between these organizations is exemplary. The County's grading ordinance and municipal code provide the legal authority for the program, and both elements have been successfully enforced. Water Resources staff and the E&S control inspectors from BID have the legal authority to issue notices of violations and assess penalties (monetary fines, stop-work orders, etc.). CMD inspectors may issue field instructions and/or a notice of non-compliance to remedy identified problems, but additional enforcement activities must be pursued by the Water Resources Department.

CMD E&S control inspectors oversee the grading and infrastructure improvements (underground utilities, curb gutter, sidewalk, and final paving) for private development and also provide construction inspection services for public construction projects. Once building permits are issued, BID E&S control inspectors ensure continued compliance through completion of the building. Water Resources Department supervisory staff provide the third tier of construction oversight and are often called on when enforcement activities escalate. All three groups of inspectors ensure that compliance with SWPPPs and E&S control plans (where applicable) and ensure project owners have submitted an NOI and prepared a SWPPP in compliance with the State General Construction Permit. The inspectors also are trained in proper construction site management and inspect the sites for other nonsediment discharges (e.g., stucco waste, concrete) and nonvisible pollutants like lime and other soil conditioners. Combined, these three organizations provide a seamless and very effective process for ensuring compliance and preventing illicit discharges from construction projects.

- *The BID implements the County's Stormwater Pollution Prevention Program, which is designed to raise stormwater protection awareness and educate contractors, homebuilders, other County inspectors, and the community at large.*

These activities are conducted in addition to the training sessions discussed in the finding in section 2.1.5. The BID team has hosted numerous training sessions for the construction community aimed at improving compliance with State and local regulations for construction sites. Specific programs have targeted landscape contractors, mobile power washers, concrete contractors, and pool builders. Additionally, the team has worked with the local chapter of the Building Industry Association to develop a superintendent's checklist to help ensure compliance on job sites. Pre-job tailgate sessions are routinely conducted to reinforce stormwater protection and to ensure that a notice of intent (NOI) has been filed and the accompanying SWPPP is adequate. The BID was recently awarded the Sacramento Environmental Commission's Third Annual Environmental Recognition Award. This program could also be a model for other Phase I and II communities.

Deficiencies Noted:

- The County's construction program lacks a formal enforcement escalation plan.*
 The Water Resources Department needs to strengthen its enforcement process by developing a formal enforcement escalation plan for construction oversight. Such a plan would ensure a defensible and consistent approach to future enforcement cases. The Industrial Waste Section's *Enforcement Response Plan* or the City of Sacramento's *Guidelines for Determining Administrative Penalties for Prohibited Non-Stormwater Discharges* could be used as a template.
- The County's public construction projects lack an equitable bid process for E&S controls.*
 Currently, the County does not mandate or include specific E&S controls in bid packages for public projects. Bidders are allowed to develop their own list and cost estimate for such controls, which often results in artificially low estimates. If the bids are not evaluated thoroughly, this process can inherently reward bids with inadequate E&S controls. In addition, in some cases, when construction begins and the installed E&S controls are found to be inadequate, the approved bid hinders the ability of the County inspector to enforce a remedy. To alleviate this problem, the County should consider including specific E&S control measures in the job specifications to ensure that contractors provide adequate funding. Alternatively, the County could include a set cost for applicable controls to provide a level cost structure for all bidders. The speaker at the County's own construction workshop instructed private developers to allocate 1.5 to 3.5 percent of the total project costs for E&S controls. The County should adhere to this principal for public construction projects as well.

2.3.4 Evaluation of New Development Program

Deficiency Noted:

- The County needs to revise the municipal code to ensure that both discretionary and ministerial projects conform to applicable stormwater regulations.*
 Currently, some of the building and design standards in the County's municipal code do not provide the same level of stormwater protection provided by the development requirements in the *On-Site Stormwater Quality Control Measures* manual. These discrepancies apply only to ministerial projects (i.e., projects that are not subject to discretionary approval) because they do not undergo the review, potential conditioning, and approval process required of discretionary new development projects. As an example, a tenant improvement project involving the installation of a trash/dumpster impoundment or redesigning a parking lot or sidewalk might comply with the municipal code even though the installation would contrast with requirements contained in the *On-Site Stormwater Quality Control Measures* manual. These discrepancies provide a loophole in the process and ultimately undermine the intent of the new development requirements. The County has identified several such discrepancies and needs to develop a strategy to close this loophole.

2.3.5 Evaluation of Municipal Operations Program

Positive Attribute:

- *The Department of Transportation's Maintenance and Operations Division and Hazardous Materials Response Team have created BMP handbooks for their respective responsibilities.*

The Maintenance and Operations Division handbook provides detailed BMPs for both routine and emergency activities. Topics covered include roadside ditch digging, pothole patching, storm patrol, saw cutting, street marking removal, painting, post installation, roadside herbicide application, roadside mowing, tree trimming/removal, roadside vegetation and hedge trimming, vegetation truck watering, street sweeping, yard maintenance, disposal of bituminous waste and open containers, storage of materials in the yard, disposition of hazardous materials, and washing of county vehicles and equipment. The BMP handbook is comprehensive and formalizes the approved maintenance and operation activities for Division staff.

The Hazardous Materials Response Team also has created a comprehensive handbook for its activities. Topics covered include hazardous materials program, street sweeping program, litter collection, corporation yard operation and maintenance, and other assorted operational BMPs. The handbook also provides a detailed summary of the accomplishments of each program element, the quantity and types of materials recovered, and a year-by-year comparison for each category. Both handbooks could be a model for other Phase I and Phase II programs.

Deficiencies Noted:

- *The Department of Transportation corporation yard lacks sufficient controls to prevent stormwater contamination.*

Evidence of an illegal discharge was observed at the Department of Transportation's paint, signs, and signals yard. The discharge originated from overspray from a vehicle wash bay. Facility representatives indicated that the paint trucks are too large for the wash bay, and therefore a significant portion of the truck protrudes during washing. Although washing was not occurring at the time of the evaluation, the surrounding pavement was wet and water was flowing into the ribbon drain and had pooled outside the fenced area adjacent to the yard entrance. The drainage area was entirely saturated, indicating the discharge was a common occurrence. Additionally, the ribbon drain was immediately adjacent to the hazardous materials temporary lay-down area and 90-day storage shed. The County needs to eliminate this unauthorized non-stormwater discharge.

A potential pollutant source was also identified at the Department of Transportation's auxiliary corporate yard. A large stockpile of ground pavement measuring approximately 35 feet by 35 feet by 10 feet was present in the middle of the yard without any form of secondary containment. Although no discharge was occurring at the time of the evaluation, fine particles and drag-out from the stockpile area were evident. In addition, the material was not listed as a potential pollutant source in the

SWPPP for the yard. The Department had provided secondary containment for a variety of other materials in the yard (e.g., street sweeping debris, dirt, bituminous) and needs to provide containment for this stockpile as well. In addition, the SWPPP must be updated to reflect current conditions.

- *A Water Quality Department municipal maintenance project failed to install E&S controls.*

Temporary E&S controls were not being used at the Water Quality Department's Clara Way manhole replacement project. Field crews performing the maintenance activity displayed limited knowledge of the purpose and need for the use of temporary controls. The field supervisor indicated that the primary BMP used by the Department was attention to the weather forecast and avoidance of work in wet weather. Although the relative threat to water quality from this particular activity was low, the work merited deployment of minimal BMPs such as drop inlet protection and containment for sand and gravel stockpiles. Additional evaluations would be required to determine whether the lack of BMPs and low stormwater awareness were typical or atypical of Water Quality Department maintenance activities. Nonetheless, the Water Quality Department should expedite the development of a routine and emergency BMP handbook and aggressively train supervisors and field crews on proper procedures for protecting stormwater quality.

- *The County currently lacks prioritization schedules for the stormwater collection system.*

The County should establish a schedule to ensure that high-priority areas of the storm drain system are cleaned more frequently than once every 10 years. The Water Quality Department's Collection Systems Division recently completed a 5-year project to clean all drop inlets in the County (estimated to be 80,000 as of September 14, 2001). The process recently shifted to cleaning the system laterals (estimated to be 600 miles), which is expected to take an additional 2 to 5 years. The Division deploys a dedicated team of two staff for all cleaning activities, and based on past performance and estimated workload, it could be approximately 10 years until the drop inlets are cleaned again. County representatives indicated that the cleaning project has been highly successful at removing debris and eliminating blockages. For example, in 1995 they received approximately 2,000 flooding calls from a ½-inch rain event. In 2002 the number of calls had declined to approximately 30 for a similar event.

2.3.6 Evaluation of Industrial Program

The County's industrial program is discussed in the finding in section 2.1.7.

2.4 City of Folsom

2.4.1 Evaluation of Program Management

Positive Attribute:

- *Good coordination and communication exist among the City departments responsible for implementation of the stormwater management program.*

The three City departments responsible for the stormwater program—Planning, Inspections, and Permitting Department, Public Works Department, and Parks and Recreation Department—participate in weekly coordination meetings to discuss issues related to program implementation. Select staff also attend monthly meetings with the other copermittees.

2.4.2 Evaluation of Illegal Discharge Program

Positive Attribute:

- *The City of Folsom provides residents with a convenient door-to-door household hazardous waste collection program.*

Twice a week City residents can have hazardous materials picked up at their homes for recycling or proper disposal. This service is provided free of charge. Materials eligible include batteries, paint, cathode ray tubes, antifreeze, waste oil, oil filters, and propane tanks. Materials like pesticides, solvents, and gasoline are not part of the City's collection program; residents must use the County's program to properly dispose of these materials. The City of Folsom is working to expand the program by signing a Memorandum of Understanding with the County and City of Sacramento to make their facilities available to City of Folsom residents. The City might want to consider incorporating a user survey into this program to assess residents' awareness of stormwater issues.

2.4.3 Evaluation of Construction Program

Positive Attributes:

- *The City of Folsom's construction inspector works directly with City planners and private developers from pre-project meetings through project completion to ensure appropriate selection and use of E&S controls.*

All construction projects have a pre-grading meeting to discuss compliance issues. The construction inspector is part of this pre-project meeting, giving him the opportunity to address installation and maintenance of BMPs with City planners and the developers. Inspections occur weekly during the dry season and daily during the wet season, with pre- and post-storm inspections occurring at all sites. Outreach conducted by the construction inspector includes winterization and wet season letters that go out to all construction sites greater than 5 acres. The City might also want to consider sending these letters out to smaller construction sites, including custom homebuilders.

In addition to meeting with project superintendents, the construction inspector also meets with other copermittee construction inspectors at least once per month to discuss issues such as BMP effectiveness and new technologies.

- *The City of Folsom developed an informational package tailored to the needs of custom homebuilders.*

The City of Folsom is experiencing rapid growth due to new residential construction, and custom homebuilders are of particular concern to the City. Unlike larger developers, custom homebuilders might not be familiar with proper installation and maintenance of E&S controls and are not required to develop and implement a SWPPP. Recognizing that custom homebuilders might need tailored information about the planning, permitting, and building process, the City has developed a packet containing brochures, checklists, and applications. Included in this packet is information about the grading process and the need for grading permits, as well as notes indicating that E&S controls should be in place during the rainy season. After reviewing the material, the evaluation team recommends that the content be expanded to include more specific information on the types and proper installation and maintenance of E&S controls. Information on potential fines and water quality impacts due to noncompliance with E&S controls might also prove useful in raising awareness and achieving greater compliance.

- *All building inspectors receive 8-hour stormwater training.*
The City's building inspectors and full-time construction inspector work together to identify problems on construction sites related to stormwater. Building inspectors receive the same 8-hour stormwater training that the construction inspector receives, allowing building inspectors to incorporate stormwater BMP implementation and maintenance into their regular building inspection activities. This approach also allows the City to temporarily suspend building inspections as a tool to achieve compliance when BMPs are not properly installed or maintained.

Deficiencies Noted:

- *The City construction inspectors fail to ensure adequate maintenance of private construction E&S controls.*

Evaluations of both large and small construction sites revealed some poorly maintained E&S controls, such as matted fiber rolls, sagging silt fencing, and unproductive hydroseeded areas. In one instance, there was a concrete washout area where concrete had been poured behind the contained area rather than in it. Although most sites appeared to have adequate controls installed, most needed improved maintenance.

- *The City should augment the County's education efforts to effectively reach specific target audiences.*
Although the County is responsible for education and outreach for all copermittees, the City should augment these efforts to reach certain target audiences that routinely generate unauthorized non-stormwater discharges. The City of Folsom has experienced difficulties with landscapers and pool installers at large residential developments. During the evaluation site visits, practices such as leaving piles of uncovered dirt and mulch in driveways and tracking sediment from the backyard into the street during pool construction were noted. These types of behaviors could adversely affect the storm sewer system. Where specific target audiences exhibit a need for intensive, specialized education and outreach, it is recommended that

Folsom either work with the County to ensure this educational need is met or take the initiative to conduct more targeted outreach.

2.4.4 Evaluation of New Development Program

Deficiency Noted:

- *The City of Folsom lacks effective coordination regarding the ownership and maintenance of post-construction controls.*

The City of Folsom needs to evaluate its procedures for maintaining structural controls and enforcing maintenance agreements. The selection, approval, and maintenance of post-construction structural controls require a coordinated approach from a variety of City departments. Past program evaluations have indicated that the most successful municipal stormwater programs have good communication between the planning, construction oversight, and maintenance departments. The exact location, ownership status, sizing considerations, and operation and maintenance requirements of the controls must be well documented and communicated to the public sector maintenance departments and facility owners. If possible, this information should be included in geographic information systems (GIS) and crew map books.

In addition, the operation and maintenance requirements for structural controls often are known by the developers and project engineers and applied during development but are not ultimately communicated to the facility tenants. In the City of Oxnard, City employees educate the tenants of newly constructed facilities (through homeowners associations and on-site managers) on the operational and maintenance requirements for constructed water quality controls at the facilities. The City of Oxnard also maintains the right to assume maintenance in certain circumstances and bill (or place a lien on) the respective parties for services rendered. The City of Folsom could consider a similar policy.

2.4.5 Evaluation of Municipal Operations Program

Adequate.

2.4.6 Evaluation of Industrial Program

This program component, still under development during the evaluation, will be primarily addressed through a cooperative agreement with the County. See finding in section 2.1.7 above.

2.5 City of Galt

2.5.1 Evaluation of Program Management

Deficiencies Noted:

- *The City of Galt lacks interdepartmental coordination for stormwater program implementation.*

The Public Works Department serves as the lead department for program implementation and its staff are working to establish better coordination among the other City departments, primarily the Building Inspection and Code Department, to address stormwater program implementation collaboratively. Currently, other departments view stormwater management as the sole job of the Public Works Department. As tentative order requirements, such as the new development standards, take effect, it will be necessary for City departments to work together more cooperatively.

- *The City of Galt's stormwater ordinance provides legal authority but does not have adequate enforcement tools to achieve compliance.*

Although a new stormwater ordinance for the City of Galt has been drafted, it is on hold until the tentative order requirements are finalized. The City's existing ordinance is very vague about the enforcement tools available to the Public Works Director, and limits the maximum penalty that the City can exact to \$25 for the first offense. The existing ordinance significantly limits the City's ability to enforce the stormwater program.

2.5.2 Evaluation of Illegal Discharge Program

Deficiency Noted:

- *The City of Galt's illicit discharge detection and elimination program focuses primarily on spill response.*

The City's illicit discharge detection and elimination program consists of spill response, storm drain stenciling for new storm drains, and the County-run household hazardous waste collection program. Although these are important components, they do not constitute a comprehensive illicit discharge detection and elimination program. For example, the City should document procedures for identifying and eliminating illicit connections and discharges and should screen the MS4 for dry weather flows. See finding in section 2.1.4 for additional information.

2.5.3 Evaluation of Construction Program

Deficiency Noted:

- *Failure to ensure the installation and maintenance of private construction E&S controls.*

E&S controls at many of the observed construction sites were either missing or in need of maintenance. A few of the many examples included curbs not protected by wattles, portable toilets too close to the sidewalk, gravel/sand piles not adequately covered, and split sandbags used for check dams. A significant problem was observed at the Grizzly Hollow community housing project, where significant attention was needed due to lack of BMPs and inadequate maintenance. Because of its small size, this residential construction site does not require coverage under the State's General Construction Permit, and the City stated that the lack of enforcement tools under the existing ordinance was limiting the ability of the Public Works Department to achieve

compliance. The City could work with the County on methods to improve compliance on construction sites with E&S control standards.

2.5.4 Evaluation of New Development Program

Deficiency Noted:

- *The City's Planning Department does not condition plans with post-construction stormwater controls.*

The City of Galt's Planning Department currently does not incorporate post-construction stormwater controls as a condition of plan approval. Staff from the Planning Department have attended recent meetings regarding the new development standards used in other parts of the State, and they are aware that these requirements are a part of the tentative order.

2.5.5 Evaluation of Municipal Operations Program

Adequate.

2.5.6 Evaluation of Industrial Program

This program component, still under development during the evaluation, will be addressed primarily through a cooperative agreement with the County. See finding in section 2.1.7 above.